



A303 Amesbury to Berwick Down (Stonehenge)

Volume 2 – Scope

Part 8 – Integrated Project Controls

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1 Introduction

- 1.1.1 This document sets out the *Client's* requirements regarding the management and data to support delivery of integrated project controls and performance reporting throughout the life of the Scheme.
- 1.1.2 The details included here shall support the *Client's* use of its data management systems and serve to provide a management tool for both parties to assist in managing the *works*.
- 1.1.3 The *Contractor* shall be responsible for providing appropriate project controls; including change management, programme management, commercial management, and risk management.

2 Requirements

2.1 General requirements

- 2.1.1 The *Contractor* shall provide an Integrated Project Controls Plan (IPCP) within twelve (12) weeks of the *starting date* for acceptance by the *Project Manager*.
- 2.1.2 The IPCP shall describe how the *Contractor* shall deliver an integrated solution that provides transparency and accessibility of the *Contractor's* systems and data to the *Project Manager*.
- 2.1.3 The IPCP shall align with the approaches, processes and procedures given in the Project Execution Plan as defined in section S 2910 (Project Execution) of Volume 2 Part 1 (General Requirements) of the contract and shall uphold the principles of the *Client's* Project Management Plan¹ and the *Client's* Integrated Project Controls Manual².
- 2.1.4 The IPCP shall cover, as a minimum, the following topics
- commercial management,
 - risk management,
 - change and baseline management,
 - health safety and wellbeing reporting,
 - performance management,
 - quality management,
 - customer management,
 - programme management and
 - document management.
- 2.1.5 The *Contractor* shall review the IPCP with the *Project Manager* every quarter commencing from six (6) months after the *starting date* and update it as required.
- 2.1.6 The *Contractor* shall supply data and shall work within the *Client's* information systems as defined in the Volume 2 Part 5 (Digital Construction) of the contract.
- 2.1.7 A reason for not accepting the IPCP and its subsequent updates is that it does not comply with the Scope.

2.2 Commercial

Information Management Systems

- 2.2.1 The *Client* uses PRISM and CEMAR as its core information management systems for commercial management of the *works*. These systems are used to track and manage costs and report earned value management performance to drive management decisions.
- 2.2.2 The *Contractor* shall use the same or equivalent systems, or where agreed with the *Project Manager* provide the required data in compatible formats, that allow the *Client* to effectively manage the data and information provided and promote a 'single source of truth'.

¹ Refer to the Data Room [2] for the *Client's* Project Management Plan.

² Refer to the Data Room [2] for the *Client's* Integrated Project Controls Manual.

Commercial Information Requirements

- 2.2.3 The *Contractor* shall provide to the *Project Manager* its cost management organisation structure (roles and responsibilities) for managing subcontractors' (at any stage of remoteness from the *Client*) costs.
- 2.2.4 All commercial information shall be able to be disaggregated in line with the Work Breakdown Structure (WBS) as outlined in paragraph S 830.1 of Volume 2 Part 1 (General Requirements) of the contract. This is applicable to the *Contractor* and subcontractors (at any stage of remoteness from the *Client*) unless otherwise agreed with the *Project Manager*.
- 2.2.5 The first *Contractor's* Accepted Programme, as defined in section 3 (Programme) of this document, shall align with the total of the Prices at the *starting date*.
- 2.2.6 The *Contractor's* current budget, which is the current total of the Prices taking into account approved and implemented compensation events applied to the *works*, shall align with the current Accepted Programme.
- 2.2.7 The *Contractor* shall maintain and report monthly to the *Project Manager* on the difference between the total of the Prices at the *starting date* and the current budget including the value and a descriptive narrative of each compensation event.
- 2.2.8 This report shall include Defined Costs and Disallowed Costs incurred in the period, demonstrating monies paid and accruals of liability that may be applicable. These shall be backed up by clearly auditable records, which are accessible for review by the *Project Manager* upon request.
- 2.2.9 The *Contractor* shall not move costs between data points and control accounts as included within the WBS, without the agreement of the *Project Manager*.
- 2.2.10 When providing estimates to the *Project Manager* to support compensation events or forecast to completion, the *Contractor* shall use project data to demonstrate its methodology and provide an audit trail in backing up the estimate element allowances. With regard to forecast to completion, this shall be for the whole of the *works* or a *section* or *sections* as notified by the *Project Manager*.
- 2.2.11 If applicable, the *Contractor* shall report on any contingency that is being managed and when it is likely to be expended.
- 2.2.12 The *Contractor* shall identify early warnings and compensation event notices aligned to the WBS within any submitted forecasts to enable the *Project Manager* and the *Client* to manage the *works* costs accordingly.
- 2.2.13 The contractual management of change between the *Contractor* and *Project Manager* shall occur through the CEMAR system. Any change shall only be deemed accepted by the *Project Manager* on the agreement of the change event through CEMAR.
- 2.2.14 The *Contractor* with the *Project Manager* shall undertake a bottom up cost and rationalisation review of the baseline costs every six (6) months commencing from six (6) months after the *starting date*.
- 2.2.15 The *Contractor* shall provide detailed forecasts of the total Defined Cost of the work to be done in the Mobilisation Phase for acceptance by the *Project Manager*. Forecasts shall be prepared monthly from the *starting date* until the issue of a notice to proceed.
- 2.2.16 Within one (1) week of the *Contractor* submitting a Mobilisation Phase forecast for acceptance, the *Project Manager* shall either accept the forecast or notify the *Contractor* of the reasons for not accepting it. A reason for not accepting the forecast is that

- it does not comply with the Scope or
- it includes work which is not necessary for the Mobilisation Phase.

2.2.17 The *Contractor* shall make a revised submission taking account of the *Project Manager's* reasons.

2.3 Risk

2.3.1 The *Contractor* shall utilise the *Client's*

- risk management system - Xactium, and manage its data in accordance with the *Client's* Risk Management Plan³,
- risk breakdown structure for the coding of risks and
- risk scoring matrix as detailed in the Risk Management Plan.

2.3.2 When new risks or opportunities are raised, the *Contractor* shall demonstrate how they have arrived at potential risk impacts using project information e.g. the potential cost impact shall be linked to the project cost model and schedule impact shall reflect the project critical path and float allowances.

2.3.3 The *Contractor* shall carry out quantified schedule risk analysis (QSRA) and quantified cost risk analysis (QCRA) on the first Accepted Programme to assess the confidence levels of achieving the programme. These risk modelling exercises shall be on the entire programme, or elements of the programme. To carry out the QSRA and QCRA, the programme shall meet a number of key requirements, for example, removal of all constraints, unless they can be justified. The *Project Manager* shall notify the *Contractor* of these requirements once the programme for acceptance has been submitted. The frequency for the delivery of subsequent QSRA and QCRA submissions shall be quarterly commencing from six (6) months after the *starting date*. A reason for not accepting the submissions is that they do not meet the requirements of the Scope.

2.3.4 The *Contractor* shall provide a report on the QSRA and QCRA results to the *Project Manager* every quarter or as otherwise agreed with the *Project Manager*. This shall include the assumptions made in carrying out the analysis, the modelling parameters, along with details of any duration uncertainties that have been applied and the risk register with the probabilities and likely delays clearly linked to activities.

2.3.5 The *Contractor* shall provide to the *Project Manager* a monthly period end report regarding risk including the following information

- full scope risk and opportunity estimated monetary value and profile over time for current and post-mitigated positions,
- commentary around the current and post mitigated estimated monetary value of the identified risks and opportunities, and what has driven the change in period,
- the principle risks and opportunities, and how they are being managed,
- existing mitigation actions identified by the *Project Manager* or *Contractor* for review,
- progress on completing mitigation actions,
- selected risks or opportunities for escalation to the *Project Manager* and what decision is required,
- the number of risks and opportunities opened and closed in period,
- how many risks, opportunities, mitigation or exploitation actions are overdue for review or delivery,
- explanatory narrative for any risks, opportunities, mitigation or exploitation actions overdue for review of more than one (1) reporting period,

³ Refer to the Data Room [2] for the *Client's* Risk Management Plan.

- any changes required in time risk allowance with justification and
- evidence that opportunities are being implemented and benefits maximised.

2.3.6 All data provided shall be reviewed with the *Project Manager* regularly, as defined within section 5 (Meetings and Reporting Cycle) of this document.

2.4 Change and Baseline Management

2.4.1 The *Contractor* shall comply with the requirements of the *Client's* Baseline Management Plan⁴.

2.4.2 The *Contractor* shall demonstrate to the *Project Manager* that a rigorous assessment of the impact of each change has been carried out.

2.4.3 The *Contractor* shall provide to the *Project Manager* updated cost, programme and risk data sets in accordance with the *Client's* Baseline Management Plan on the acceptance of changes in accordance with the contract. These datasets shall be submitted to the *Project Manager* with the next month end report following the acceptance of a change or within another timescale as agreed with the *Project Manager*.

2.4.4 Any change event shall only be accepted by the *Project Manager* on the approval of the event through the CEMAR.

2.4.5 The *Contractor* shall provide to the *Project Manager* a monthly period end report regarding change and baseline management including the following information

- the full change register; this register shall include early warnings and status of compensation events,
- a list of change events within the period; this shall include new, accepted and rejected change events,
- commentary around the changes in period with rationalisation of any new changes proposed,
- impact analysis of proposed changes,
- any changes overdue for review or delivery and
- justification for any change reviews or impact analysis overdue for review of more than one (1) reporting period.

2.4.6 All data provided shall be reviewed with the *Project Manager* at intervals as defined within section 5 (Meetings and Reporting Cycle) of this document.

2.5 Health, Safety and Wellbeing

2.5.1 This subsection deals with the monthly progress reporting of health, safety and wellbeing (HSW). HSW is covered in section S1100 (Health, Safety and Wellbeing) of Volume 2 Part 1 (General Requirements) of the contract.

2.5.2 The *Contractor* shall provide to the *Project Manager* for acceptance a monthly period end report regarding HSW including the following information

- an update of the current Scheme hazards for review and communication,
- areas for improvement and opportunities,
- a red, amber, green (RAG) status of HSW with a short narrative to justify the rating,
- site hours in month and a running total of site hours,
- non-site hours in month and a running total of non-site hours,

⁴ Refer to the Data Room [2] for the *Client's* Baseline Management Plan.

- numbers of observations made in month and a running total, divided into good practice and areas for improvement,
- numbers of incidents, accidents and near-misses in month, and a running total of same,
- summary details of any incidents, accidents and near-misses in month, including what immediate action is being taken,
- brief status report for any ongoing investigations or safety related actions, including scheduled audits,
- a summary of key findings from site safety inspections concluded in the month and
- a summary of sickness absences over the last reporting period and a cumulative twelve (12) month running period.

2.5.3 A reason for not accepting the report is that

- it does not meet the requirements of the Scope or
- it does not provide sufficient information to determine compliance and achievement of any HSW objectives.

2.5.4 The *Contractor* shall

- input site hours for the previous month into AirsWeb 2 by the first Working Day of each month and
- input site incidents and Staff incidents into AirsWeb 2 within twenty-four (24) hours of occurrence.

2.5.5 All data provided shall be reviewed with the *Project Manager* regularly and may be covered within the meetings as defined within section 5 (Meetings and Reporting Cycle) of this document.

2.6 Performance Management

2.6.1 Each month, the *Contractor* shall submit to the *Project Manager* for acceptance a progress report covering performance management.

2.6.2 This report includes the *Contractor's* assessments of the performance metrics in the Performance Manual [1] of the contract.

2.6.3 A reason for not accepting the report is that

- it does not comply with the Scope or
- it does not include the *Contractor's* assessment of the performance metrics in the Performance Manual [1].

2.7 Quality

2.7.1 Each month, the *Contractor* shall submit to the *Project Manager* for acceptance a progress report covering quality.

2.7.2 This report shall cover progress metrics relevant to the quality plan given in section S 610 (Quality Policy Statement and Quality Plan) of Volume 2 Part 1 (General Requirements) of the contract.

2.7.3 A reason for not accepting the report is that

- it does not comply with the Scope or
- it does not align with the quality plan given in section S 610 (Quality Policy Statement and Quality Plan) of Volume 2 Part 1 (General Requirements) of the contract.

2.8 Customer

- 2.8.1 Each month, the *Contractor* shall submit to the *Project Manager* for acceptance a progress report covering customer interactions.
- 2.8.2 This report shall cover progress metrics aligned with the customer delivery plan of section S 251 (Customer) of Volume 2 Part 1 (General Requirements) and Volume 2 Part 7 (Communications, Stakeholder and Community Engagement) of the contract.
- 2.8.3 A reason for not accepting the report is that
- it does not comply with the Scope,
 - it does not align with the customer delivery plan of section S 251 (Customer) of Volume 2 Part 1 (General Requirements) of the contract or
 - it does not align with Volume 2 Part 7 (Communications, Stakeholder and Community Engagement Requirements) of the contract.

3 Programme

3.1 Programme overview

- 3.1.1 The *Client* shall use Primavera P6 as their programme management system.
- 3.1.2 The *Contractor* shall input and maintain programmes in its own Primavera P6 software, or compatible equivalent system, and shall provide to the *Project Manager* the required data to allow the *Client* to effectively manage the data promoting a 'single source of truth'.
- 3.1.3 Programmes produced by the *Contractor* during the *works* shall be developed in accordance with the requirements detailed in this section.
- 3.1.4 The *Contractor* shall hold planning sessions with the *Project Manager*, bringing in the relevant parties to work together to ensure confidence and efficiency in the delivery of the *works*. These shall be held at least monthly and shall serve to review a rolling schedule against milestones as given in the Accepted Programme.
- 3.1.5 Unless otherwise stated in this section, all programmes created by the *Contractor*, in relation to any of the *works*, shall be made available to the *Project Manager* on request with a suitable narrative describing links to key phases of the Accepted Programme and highlighting critical and near-critical path activities.
- 3.1.6 All programme submissions shall be clearly titled, numbered and dated, with the programme data date (the date which the programme is to capture progress to and forecast from) clearly visible within the Gantt chart. The layout shall be as per the *Client's* supplied WBS.
- 3.1.7 The *Contractor* shall update and issue to the *Project Manager* for acceptance, a programme which meets the definition of the *Contractor's* Accepted Programme at no less than monthly intervals, with the data date to align with the month end reporting dates of the *Client* (detailed in section 5 (Meetings and Reporting Cycle) of this document).
- 3.1.8 Each revision of the Accepted Programme shall be submitted with a narrative and detail as indicated below in addition to the requirements of core clause 31.2
- overall commentary and progress over the past month as well as principle activities for the following month,
 - a table listing completed in month milestones and a three (3) month look forward for forthcoming milestones showing baseline date, previous month's forecast, current forecast and trend,
 - a record of changes; new activities, changed durations, changed logic, changed calendar assignments, changed assumptions, changes to resource or labour allocation,
 - comparison of key milestones against the baseline,
 - critical path explanation,
 - variance of critical path since the previous programme revision,
 - identification of programme slippage,
 - proposed mitigation for programme recovery,
 - implemented changes in the period,
 - explanation for the following which falls outside of the scheduling criteria as defined in subsection 3.3 (Programming criteria) of this document
 - open-ended activities,
 - any activity over forty-four (44) calendar days in duration,
 - the use of constraints and

- excessive lag or lead times for an activity.
- agreed-in-principle changes in the period, that have been processed through change control and
- response to any *Project Manager* review comments.

3.1.9 A reason for not accepting any of the following is that it does not comply with the requirements of the Scope

- a programme,
- a programme narrative, or
- any other material submitted to the *Project Manager* to support a programme.

3.2 Programme requirements

3.2.1 This subsection and the following subsection defines the key quality criteria and requirements that shall be incorporated into programmes.

3.2.2 Programmes shall be developed in accordance with the *Client's*

- latest Planning and Scheduling Manual⁵,
- Work Breakdown Structure,
- Planning & Scheduling Appendices Handbook⁶ and
- CIP Key Milestone Definition and Coding Handbook⁷.

3.2.3 The *Contractor* shall demonstrate within the IPCP how it shall maintain a hierarchy of programmes that support each other whilst keeping detail at the appropriate level within the hierarchy. The programme hierarchy is identified below, including performance graphs, derived from the programme as described within Table 3-1 (Programme Hierarchy).

Table 3-1: Programme Hierarchy

Programme Level	Description	Summary
Level 1	The <i>Contractors</i> Summary Programme	A one to two (1-2) page A3 summary of the Accepted Programme, showing the key elements of the <i>works</i> , to Completion. This shall be submitted to the <i>Project Manager</i> for acceptance as part of the monthly submittal and for use at project progress meetings.
Level 2	The <i>Contractor's</i> Summary Design, Procurement, Fabrication, Construction and Commissioning Programmes.	Fully logic-linked critical path method (CPM) network summaries of the Level 3 Accepted Programme showing high level key design, procurement, fabrication, construction and commissioning activities.
Level 3	The <i>Contractor's</i> Accepted Programme	Cost and resource loaded logic linked CPM network, which the <i>Contractor</i> uses to plan the <i>works</i> , report progress, for earned value management, which meets all requirements within core clauses 31.2 and 32.1 and the Planning & Scheduling Appendices Handbook.
Level 3	Time Chainage Programme	A full-time chainage programme for the <i>works</i> to gang level detailing the highway, tunnel and structures elements of the <i>works</i> .
Level 3	The <i>Contractor's</i> Design Programme	A fully logic linked CPM network, containing all design deliverables, and all design activities. The <i>Contractor's</i> design programme is a sub-network of the Accepted Programme.

⁵ Refer to the Data Room [2] for the Planning and Scheduling Manual.

⁶ Refer to the Data Room [2] for the Planning & Scheduling Appendices Handbook.

⁷ Refer to the Data Room [2] for the CIP Key Milestone Definition and Coding Handbook.

Programme Level	Description	Summary
Level 3	The <i>Contractor's</i> Archaeology Programme	A fully logic linked CPM network, containing all archaeology deliverables and all archaeology activities, or links in with the Archaeologists.
Level 4	The <i>Contractor's</i> Procurement Programme	This programme identifies all of the following <ol style="list-style-type: none"> subcontract package listing; dates for procurement of subcontracts including tender periods and subcontract award dates, start dates and durations of any offsite activities required for the identified subcontract, start dates and durations of onsite activities required for identified subcontract and total duration of subcontract.
Level 4	The <i>Contractor's</i> Weekly Work Plan	A four (4) weekly rolling schedule, (one week look back, and three weeks look ahead) covering day to day activities.
Level 4	<i>Contractor's</i> Programme Performance Graphs	A suite of graphs derived from the <i>Contractor's</i> performance measurement schedule and latest Accepted Programme.
Level 4	<i>Contractor's</i> Handover Programme	A fully logic-linked CPM network for use in co-ordinating all activities involved in handing over the <i>works</i> . This is also for the handover of the health and safety file.
Level 4 / 5	<i>Contractor's</i> Possession Programmes	Detailed programmes produced by the <i>Contractor</i> for all works undertaken during possessions, minor closures or major closures of the highway network. These programmes shall have a maximum time unit of 1.0 hour.

Contractor's Summary Programme

- 3.2.4 The *Contractor* shall submit a summary programme with each programme submitted for acceptance to the *Project Manager*. The summary programme shall be developed in time-scaled format with typically not more than two hundred (200) activities and contained on one to two (1-2) sheets of A3 size. The summary programme shall highlight the critical path, key work activities, major milestones and events important to the overall management of the *works*.
- 3.2.5 Summary programme activities are related to Accepted Programme activities with the status of each summary programme activity "rolled up" from the Accepted Programme.
- 3.2.6 The summary programme shall be produced within an A303 Stonehenge Office 365 format as notified by the *Project Manager*. The *Contractor's* summary programme shall not simply be a summarised Primavera P6 output.

Contractor's Summary Design, Procurement, Fabrication, Construction & Handover Programmes

- 3.2.7 The *Contractor* shall submit to the *Project Manager* for acceptance, with each revision of the Accepted Programme, fully logic linked CPM network summary programmes for the following parts of the *works*
- design,
 - procurement,
 - fabrication,
 - archaeology,
 - construction and

- commissioning.

3.2.8 Each summary programme shall show no more than fifty (50) activities.

3.2.9 These summary programmes shall be produced within an A303 Stonehenge Office 365 format as notified by the *Project Manager*. The *Contractor's* summary programme shall not simply be a summarised Primavera P6 output.

The Contractor's Accepted Programme

3.2.10 The Accepted Programme shall be used by the *Contractor* to direct the *works* by providing parameters for the more detailed implementation programmes and tools such as the procurement programme and Weekly Work Plan. It shall also be used to identify and resolve schedule problems, measure the impact of compensation events and delays, assist in earned value calculations and develop recovery plans. Programmes shall be developed by the *Contractor* using CPM / network analysis techniques to produce a coherent programme that covers the entirety of the *works*.

The Contractor's Design Programme

3.2.11 The *Contractor's* Design Programme shall show all design deliverables and design activities in a logical format as a sub-network of the Accepted Programme. This sub-network shall be capable of review as a stand-alone programme but when integrated shall form part of the whole programme submitted for acceptance. The design programme shall have a number of control points relating to key design deliverables.

The Contractor's Archaeology Programme

3.2.12 The *Contractor's* Archaeology Programme shall show all archaeology deliverables and activities, in a programme to be developed in a logical format as a sub-network of the Accepted Programme.

Contractor's Procurement Programme

3.2.13 The *Contractor's* Procurement Programme shall identify each purchase order and subcontract to be placed by the *Contractor*. This programme shall be the most detailed procurement programme in the hierarchy and shall support the requirements of the Accepted Programme. Each item in the programme shall be tracked from the issue of a requisition or design package through various control points concluding with delivery to site (including those required by section S1200 (Subcontracting) of Volume 2 Part 1 (General Requirements) of the contract. Typical control points may include; produce bid documents; invitation to tender (ITT); bids received; contract award; subcontract design complete; start manufacture; factory test; first shipment; site delivery; and final shipment.

3.2.14 This programme shall be produced within an A303 Stonehenge Office 365 format as notified by the *Project Manager* as a standalone document separate from the Primavera P6 programme. Every activity within the programme shall be derived from and be related back to an activity which exists within the Accepted Programme.

Weekly Work Plan

3.2.15 Each week, for each element of work in hand, the *Contractor* shall issue a work plan to the *Project Manager* for acceptance. The Weekly Work Plan shall comprise a four (4) week rolling programme (one (1) week look back, and three (3) weeks look ahead) covering day to day activities. This Weekly Work Plan shall be resource loaded with critical labour resources, Equipment, Plant and Materials by discipline. The *Contractor* shall use the Weekly Work Plan to plan and schedule the *works* on a weekly basis.

- 3.2.16 Each activity within the Weekly Work Plan shall be derived from and be related back to an activity which exists within the Accepted Programme (or most recently submitted programme for review by the *Project Manager*).
- 3.2.17 The headings shall include safety, progress, programme, design, quality, access, environment, commercial and issues.
- 3.2.18 The Weekly Work Plan shall indicate all proposed hold points identified in the inspection and test plans accepted by the *Project Manager*.
- 3.2.19 There shall be a narrative report on each section/discipline of the works describing the progress over the week look back and planned for the three weeks look ahead and this shall include design and archaeological activities.
- 3.2.20 The Weekly Work Plan shall identify all works planned to be completed within the previous week at the time of production of the last Weekly Work Plan and what has been achieved.
- 3.2.21 The Weekly Work Plan shall clearly show any change in aggregated time risk allowance, free float and terminal float.
- 3.2.22 The Weekly Work Plan shall provide details of all activities planned to be started within the previous week, at the time of production of the last Weekly Work Plan and whether they have achieved their start date. Any variance shall be identified.
- 3.2.23 The Weekly Work Plan shall provide reasons for not achieving any planned activity start dates.
- 3.2.24 Reasons for not achieving planned activity start dates shall be categorised in line with a list of categories as agreed with the *Project Manager*, to be submitted to the *Project Manager* for acceptance with the first Weekly Work Plan. A reason for not accepting the list of categories is that a category given in the list
- does not relate to a reasonably foreseeable reason for not achieving a planned activity start date or
 - has not been agreed with the *Project Manager*.
- 3.2.25 The number of activity start dates not achieved, falling within each category, shall be listed and summarised as a percentage of the total number of planned activity starts for the previous week.
- 3.2.26 The data collected shall be used by the *Contractor* to identify any constraints which are preventing it from working to programme. The *Contractor* shall provide details of all actions that it intends to take to mitigate the effect of these constraints.
- 3.2.27 Planned percentage completion and a count of reasons for any incompleteness shall be detailed with trends identified.
- 3.2.28 The Weekly Work Plan shall be produced within an A303 Stonehenge Office 365 format as notified by the *Project Manager*. The Weekly Work Plan shall not simply be a summarised Primavera P6 output.

Contractor's Programme Performance Graphs

- 3.2.29 The *Contractor* shall prepare graphs to assist in demonstrating the viability of the *Contractor's* programme in terms of cost, quantities, production rates and resources required to support the programme. These graphs shall be derived from the *Contractor's* performance measurement data and the latest Accepted Programme.

3.2.30 The *Contractor* shall provide updated graphs as part of the submission of a programme for acceptance by the *Project Manager*. The graphs shall show planned, actual, and forecast to go. The graphs shall include

- bulk quantities (e.g. concrete poured, rebar: steel fixed, excavation: muck away),
- resource usage graphs,
- cost and cash flow graphs,
- earned value management graphs and
- aggregated time risk allowance usage.

3.2.31 The graphs shall be produced within an A303 Stonehenge Office 365 format as notified by the *Project Manager*.

Contractor's Handover Programme

3.2.32 The *Contractor* shall produce a detailed handover programme aligned to the completion dates for each *section*. These programmes shall be submitted by the *Contractor* in logic linked critical path method format produced in Primavera P6. Initial versions of each handover programme, if required by the *Project Manager*, shall be submitted to the *Project Manager* for acceptance at least eight (8) weeks prior to the first handover activity starting.

Contractor's Possession Programmes

3.2.33 Detailed programmes shall be produced by the *Contractor* for all works undertaken during possessions and closures of the strategic roads network. These programmes shall have a maximum time unit of 1.0 hour. These programmes shall also be subjected to risk analysis by the *Contractor* to ensure that work is completed during the possession or closure, or that alternative action can be taken to ensure that infrastructure is handed back on time.

3.2.34 These possession programmes shall be produced within an A303 Stonehenge Office 365 format as notified by the *Project Manager*. These possession programmes shall not simply be a summarised Primavera P6 output.

3.3 Programming criteria

3.3.1 The Accepted Programme to be developed shall include

- the detailed Scheme Scope,
- the *Client's* WBS, the structure of the WBS is mandated to Control Account level and is not to be altered without agreement from the *Project Manager*. Below this the structure of the WBS can be further developed by the *Contractor* into suitable work packages,
- manageable stages, completion of which are marked as milestones,
- all interfaces with other areas of the *works*, identified using interface milestones,
- all key milestones and interdependencies,
- the programme critical path,
- the following relating to activities
 - all activities to have unique IDs,
 - all activities to have clear descriptions,
 - activity names shall be described using a verb,
 - all activities are to use the *Client's* global calendars or Scheme calendars as notified by the *Project Manager*,

- all activities to be fully logic linked and not open ended. Each activity shall have at least one predecessor and one successor with the exception being the start and end of the Scheme.
- all activities to have a maximum duration of forty-four (44) calendar days per activity. Activities shall include *key persons* and resource distribution up to Control Account Level 3 to facilitate forecasting and earned value analysis and
- use of constraints shall be kept to a minimum and in compliance with the Planning & Scheduling Appendices Handbook.
- cost loaded schedule to facilitate reporting at Control Account Level 3. The Prices shall be loaded by the *Contractor* onto a sufficient quantity of activities as to allow a detailed planned value baseline curve to be created by the *Contractor* for the purpose of earned value analysis,
- activities detailing when review and approvals are required from the *Project Manager* and other stakeholders,
- information the *Contractor* requires from the *Client* or others to deliver the *works*,
- the dates when the *Contractor* plans to submit any of the design required for the *works*,
- the dates from the Procurement Programme when any key items of Plant and Materials and Equipment shall be required at Site,
- the dates for any establishment of fabrication facilities and dates for fabrication of materials,
- the dates of submission of the *Contractor's* quality plan as defined in section S 610 (Quality Policy Statement and Quality Plan) of Volume 2 Part 1 (General Requirements) of the contract,
- the dates of submission of any safety plans,
- the dates of submission for acceptance of the *Contractor's* safe systems of work,
- the *Project Manager's* acceptance periods (in accordance with Volume 2 Part 9 (Review and Certification) of the contract),
- the dates of submission of any logistics plan,
- the dates of commencement of all permanent and temporary construction and installation activities,
- the dates of factory and site inspection and tests,
- the dates of submission of any design materials and any other deliverables required by the contract,
- details of any utility supplies development, submission and acceptance allowing sufficient time for each stage of the process and allowances for resubmission,
- details of any third party interfaces and submissions development, submission and acceptance allowing sufficient time for each stage of the process and allowances for resubmission,
- the parts of the *works* to be completed by subcontractors (at any stage of remoteness from the *Client*)
- all key project workshops and meetings (including stakeholder, inception and closedown meetings),
- excessive lag or leads, defined as greater than five (5) calendar days or on greater than 5% of activities used in the programme,
- implemented changes and changes approved in principle by the *Project Manager* but not yet implemented,
- a summary of the total number of personnel expected to deliver the *works* each week including those employed by subcontractors,
- the time periods in relation to a submission for technical approvals by the *Project Manager*,
- a time chainage programme to gang level detailing the construction of the *works*,

- the aggregate time risk allowance that the *Contractor* has identified, clearly showing time risk allowance in front of Completion of each *section* and
- the physical percent complete and remaining duration.

4 Document Management

- 4.1.1 The *Contractor* shall comply with the document management processes defined in the *Client's* Document Control Procedure⁸.
- 4.1.2 Documents shall only be considered accepted following upload by the *Contractor* and the notification of acceptance by the *Project Manager* through the *Client's* document management system.
- 4.1.3 The *Contractor* shall provide to the *Project Manager* a monthly period end report which includes the following information
- the number of documents submitted to the *Project Manager* in the period,
 - the number of documents rejected and commentary to address any concerns,
 - commentary around any delays to submissions and
 - forecast dates of documents still to be delivered.
- 4.1.4 A reason for not accepting the report is that it does not comply with the Scope.

⁸ Refer to the Data Room [2] for the *Client's* Document Control Procedure.

5 Meetings and Reporting Cycle

5.1 Reporting Cycle

- 5.1.1 The *Contractor* shall supply a month end report to the *Project Manager* for acceptance summarising the activities defined in section 2 (Requirements) and section 3 (Programme) of this document no later than the third (3rd) Working Day of the following month. The report shall cover as a minimum
- an overall summary and proposed red, amber, green (RAG) status of the *works*. Justification shall be given for the classification of the RAG rating,
 - a controls summary page detailing key messages and metrics for each of the activities,
 - a RAG status and summary of activities, issues and progress in month for each of the activities. Commercial reporting shall be covered by a separate report,
 - identification, progress and current status of any issues to be escalated to the *Project Manager*. Each issue escalated shall require a brief explanatory paper,
 - a 'Plan on a Page' illustrating principal risk and programme activities, as well as milestones for the next twelve (12) months and
 - details of any success, reward/recognition or otherwise positive news that the *Contractor* wishes to share.
- 5.1.2 A reason for not accepting the month end report is that it does not meet the requirements of the Scope.

5.2 Meeting Requirements

- 5.2.1 The *Contractor* shall attend key meetings. Key meetings requiring the attendance of the *Contractor* include those shown within Table 5-1 (Key Meetings requiring the attendance of the *Contractor*).
- 5.2.2 Key meetings shown in Table 5-1 (Key Meetings requiring the attendance of the *Contractor*) shall be held monthly and no later than the fifteenth (15th) calendar day of each month.
- 5.2.3 A timetable of meeting times and dates for the following three (3) months shall be submitted to the *Project Manager* for acceptance with the first monthly progress report as described paragraph S 850.4 of Volume 2 Part 1 (General Requirements).
- 5.2.4 The *Contractor* and the *Project Manager* shall review the timetable every month as part of the monthly progress meeting.
- 5.2.5 The *Contractor* shall update the timetable as required and submit the updated timetable to the *Project Manager* for acceptance.
- 5.2.6 A reason for not accepting the timetable is that
- it does not meet the requirements of the Scope, or
 - one or more of the times and dates proposed create a scheduling conflict as notified by the *Project Manager*.

Table 5-1: Key Meetings requiring the attendance of the *Contractor*

Meeting	Frequency	Purpose
Progress Meeting	monthly	this review shall address monthly progress in-line with the metrics outlined in section 2 (Requirements) and section 3 (Programme) of this document.

Meeting	Frequency	Purpose
Collaborative Planning	monthly	collaborative planning is about stakeholders working together to improve productivity, reduce time and cost, and to highlight any new or emerging risks or issues that shall need to be addressed.
Change Review	monthly	a change meeting shall be held monthly to review changes (new and existing). The impact on the commercial position shall be established to feed into the monthly commercial meeting.
Commercial Review	monthly	a commercial meeting shall be held to review the <i>Contractor's</i> financial performance against its forecast.
Risk, and Issues Review	monthly	these meetings shall serve to identify new risks as well as review current risks, issues and any associated actions. The attendees shall ensure consistency in classifications and ratings and discuss methods to reduce the risk profile of the <i>works</i> .

6 Records

6.1 Tunnel Boring Machine Records

6.1.1 The *Contractor* shall

- keep detailed records of any delay to the advancement of the Tunnel Boring Machine and
- make and supply such records to the *Project Manager*.

6.1.2 Each month, the *Contractor* shall submit

- the *Contractor's* assessment of the change in the Aggregated Delay since the last assessment and
- the detailed reasons for the change in the Aggregated Delay

to the *Project Manager* for acceptance.

A reason for not accepting the *Contractor's* assessment shall be

- the delay is not due to physical conditions which
 - are within the Site,
 - are not due or related to weather conditions and
 - an experienced contractor would have judged at the Contract Date to have such a small chance of occurring that it would have been unreasonable to have allowed for them

that adversely impacts the advancement of a Tunnel Boring Machine due to

- voids greater than 100m³ but excluding voids greater than 100m³ due to the actions or inactions of the *Contractor*,
 - man-made obstructions but excluding man-made obstructions due to the actions of the *Contractor* or
 - man-made contamination but excluding man-made contamination due to the actions of the *Contractor* or
- is not justified by the *Contractor's* records.

Reference List

- [1] Highways England, "A303-Proc-PD-008-Performance Manual".
- [2] Highways England, "Data Room," [Online]. Available:
<https://a303stonehenge.sharepoint.com/sites/DataRooms/procurement/main-works/Shared%20Documents/Forms/AllItems.aspx>. [Accessed April 2020].